

Contents

Summary of Environmental Impact Statement

Introduction	2
Purpose and Need	5
Public Notification and Issue Identification	6
Cooperating Agencies	7
Funding and Schedule	8
Review of Alternatives	8
Preferred Alternatives	16
Summary of Environmental Consequences	19
Mitigation	37
References	50

Chapter 1 – Purpose and Need

1.1	Kodiak Airport: Setting and History	1-2
1.2	Runway Use: Takeoffs and Landings	1-6
1.3	Runway Safety Areas	1-8
1.4	Project Purpose and Need	1-11
1.5	Required Actions, Funding, and Timeframe	1-13
1.6	Public Notification and Issue Identification (Scoping)	1-15
	References	1-17

Chapter 2 – Alternatives

2.1	Range of Alternatives Considered	2-2
2.2	Initial Consideration of the Range of Alternatives	2-4
2.3	Additional Considerations in Developing Alternatives	2-14
2.4	Alternatives Carried Forward for Further Evaluation	2-16
2.5	Preferred Alternatives	2-46
	References	2-58

Chapter 3 – Affected Environment

3.1	Area Environs	3-1
3.2	Land Use	3-5
3.3	Historical Context	3-6
3.4	Coastal and Marine Resources	3-7
3.5	Freshwater Resources – Buskin River	3-7
3.6	Wetlands	3-10
3.7	Water Quality	3-10
3.8	Terrestrial Resources	3-11

3.9	Subsistence	3-11
3.10	Recreation Sites and Wildlife Refuge	3-13

Chapter 4 – Environmental Consequences

Section 4.0	– Introduction to Chapter 4 Environmental Consequences	4.0.1
Section 4.1	– Coastal Resources and Navigation	4.1.1
Section 4.2	– Water Quality and Resources	4.2.1
Section 4.3	– Wetlands and Waters of the U.S.	4.3.1
Section 4.4	– Floodplains	4.4.1
Section 4.5	– Fish and Invertebrates	4.5.1
Section 4.6	– Waterbirds	4.6.1
Section 4.7	– Marine Mammals	4.7.1
Section 4.8	– Upland Vegetation and Wildlife	4.8.1
Section 4.9	– Historical, Architectural, Archaeological, and Cultural Resources	4.9.1
Section 4.10	– Socioeconomic Impacts, Environmental Justice, and Children’s Health and Safety Risks	4.10.1
Section 4.11	– Subsistence Resources and Uses	4.11.1
Section 4.12	– Noise	4.12.1
Section 4.13	– Compatible Land Use	4.13.1
Section 4.14	– Department of Transportation Act, Section 4(f)	4.14.1
Section 4.15	– Light Emissions and Visual Impacts	4.15.1
Section 4.16	– Hazardous Materials	4.16.1
Section 4.17	– Farmlands	4.17.1
Section 4.18	– Natural Resources and Energy Supply	4.18.1
Section 4.19	– Air Quality	4.19.1
Section 4.20	– Climate	4.20.1
Section 4.21	– Wild and Scenic Rivers	4.21.1
Section 4.22	– Construction Impacts	4.22.1
Section 4.23	– Secondary (Induced) Impacts	4.23.1
Section 4.24	– Alaska National Interest Lands Conservation Act (ANILCA) Title XI	4.24.1

Chapter 5 – Cumulative Impacts

5.1	Introduction	5-1
5.2	Projects Considered in the Cumulative Effects	5-2
5.3	Cumulative Effects Analysis	5-6

Chapter 6 – Mitigation

6.1	Summary of the Preferred Alternatives	6-1
6.2	Requirements Relevant to Mitigation	6-2
6.3	Development of the Mitigation Plan	6-4
6.4	Mitigation Plan: Measures to Avoid and Minimize Environmental Impacts	6-7
6.5	Mitigation Plan: Compensatory Mitigation	6-13
	Environmental Impact Summary (Preferred Alternatives)	6-15

Chapter 7 – Preparers Chapter

7.1	List of Preparers	7-1
7.2	Distribution List	7-5

Chapter 8 – Glossary 8-1**Appendices (See Enclosed CD)**

Appendix 1	Water Quality Appendix
Appendix 2	Wetland Appendix
Appendix 3	Floodplains Appendix
Appendix 4	Terrestrial and Marine Wildlife Appendix
Appendix 5	Essential Fish Habitat Appendix (EFHA)
Appendix 6	Biological Assessment Appendix
Appendix 7	Historic and Cultural Appendix
Appendix 8	Noise Appendix
Appendix 9	Construction Appendix
Appendix 10	Necessary Findings and Project Approvals
Appendix 11	Army Corps of Engineers Permit Application Appendix
Appendix 12	Subsistence Evaluation and ANILCA Application Appendix
Appendix 13	Project Coordination Appendix
Appendix 14	Response to Comments on DEIS

Tables

Summary of Environmental Impact Statement 1

Table 1	Range of Alternatives Summary	15
Table 2	Environmental Impact Summary	41

Chapter 2 – Alternatives

Table 2-1	Runway Safety Area and Length Analysis	2-9
Table 2-2	Initial Range of Alternatives Summary	2-45
Table 2-3	Environmental Impact Summary Improvements to the Runway Safety Area	2-47

Chapter 3 – Affected Environment

Table 3-1	Buskin River Salmonid Species Occurrence/Timing By Life Stage	3-9
-----------	---	-----

Chapter 4 – Environmental Consequences

Table 4.2-1	2008 NPDES MSGP Benchmark Monitoring Concentrations	4.2-7
Table 4.2-2	Existing Conditions: Receiving Water Bodies	4.2-13
Table 4.2-3	Kodiak Airport Benchmark Monitoring Results	4.2-15
Table 4.2-4	USCG Wastewater Treatment Plant Effluent Sampling Results	4.2-23
Table 4.2-5	2009-2011 Marine Water Quality Results – St. Paul Harbor	4.2-24
Table 4.2-6	Combined Impacts	4.2-36
Table 4.3-1	Summary of Direct Impacts to Wetlands and Waters Of the U.S.	4.3-3
Table 4.3-2	Jurisdictional Wetlands in the Kodiak Airport Project Area	4.3-7
Table 4.3-3	Functions Provided by Tidal Wetlands	4.3-14
Table 4.3-4	Functions Provided by Riverine/Slope Proximal Wetlands	4.3-15
Table 4.3-5	Functions Provided by Depressional and Riverine Wetlands	4.3-16
Table 4.3-6	Combined Impacts	4.3-25
Table 4.5-1	Summary of Potential Direct and Indirect Effects to Fish and Aquatic Invertebrate Species and Habitats In the Project Area from Runway 07/25 Alternatives	4.5-3
Table 4.5-2	Summary of Potential Direct and Indirect Effects to Fish and Aquatic Invertebrate Species and Habitats In the Project Area from Runway 18/36 Alternatives	4.5-4

Table	4.5-3	Timing of Habitat Use by Salmonids in Freshwater Environments	4.5-17
Table	4.5-4	Timing of Habitat Use by Salmonids in Marine Environments	4.5-18
Table	4.5-5	Estimated Escapement of Salmonids in Chiniak Bay Tributaries	4.5-22
Table	4.5-6	Non-Salmonid Fishes Identified in the Project Area	4.5-24
Table	4.5-7	Algae and Invertebrates Identified During Intertidal And Subtidal Surveys in the Project Area	4.5-33
Table	4.5-8	Summary of Potential Direct and Indirect Effects to Fish and Aquatic Invertebrate Species and Habitats in The Project Area from Runway 07/25 Alternatives	4.5-48
Table	4.5-9	Acres of Direct Habitat Loss for Runway 07/25 Alternatives	4.5-52
Table	4.5-10	Acres of Direct Marine Vegetation Loss for Runway 07/25 Alternatives	4.5-52
Table	4.5-11	Direct Water Column Displacement for Runway 07/25 Alternatives	4.5-53
Table	4.5-12	Acres of Armor Rock in Aquatic Habitats Within Runway 07/25 Fill Footprints: Existing, Proposed, And Net Changes	4.5-53
Table	4.5-13	Acres of Direct Habitat Loss for Runway 18/36 Alternatives	4.5-63
Table	4.5-14	Acres of Direct Marine Vegetation Loss For Runway 18/36 Build Alternatives	4.5-64
Table	4.5-15	Direct Water Column Displacement for Runway 18/36 Build Alternatives	4.5-64
Table	4.5-16	Acres of Armor Rock in Aquatic Habitats within Runway 18/36 Footprints: Existing, Proposed, and Net Changes	4.5-68
Table	4.5-17	Summary of Potential Direct and Indirect Effects to Fish and Invertebrate Species and Habitats in the Project Area from Runway 18/36 Alternatives	4.5-79
Table	4.5-18	Combined Loss of Marine Habitat (Acres)	4.5-82
Table	4.6-1	Summary of Habitat Impacts for Federally Listed Threatened And Sensitive Waterbirds	4.6-3
Table	4.6-2	Descriptions of Threatened, Endangered, and Sensitive Waterbird Species in the Project and Landscape Area	4.6-13
Table	4.6-3	Summary of Sensitive Waterbird Observation in the Project Area from Airport Point Counts	4.6-17
Table	4.6-4	Summary of Net Impacts of Runway 07/25 Safety Area Improvements on TES Waterbird Habitats	4.6-30
Table	4.6-5	Summary of Net Impacts of Runway 18/36 Safety Area Improvements on TES Waterbirds	4.6-40
Table	4.6-6	Impacts to Threatened, Endangered and Special Status Species for Combinations of Alternatives	4.6-52

Table	4.7-1	Summary of Habitat Impacts for Marine Mammals	4.7-3
Table	4.7-2	Marine Mammals Known to Occur in or Near Chiniak Bay	4.7-9
Table	4.7-3	Summary of Northern Sea Otter Observations in the Project Area From Airport Point Counts	4.7-18
Table	4.7-4	Impacts on Marine Mammal Habitat for Combinations Of Alternatives	4.7-44
Table	4.8-1	Summary of Impacts on Cover Types	4.8-2
Table	4.8-2	Summary of Habitat Impacts for Non-Listed Sensitive Upland Wildlife Species	4.8-6
Table	4.8-3	Cover Types in the Airport Project Area	4.8-9
Table	4.8-4	Summary of Impacts of Runway 07/25 Safety Area Alternatives on Cover Types	4.8-32
Table	4.8-5	Summary of Impacts of Runway 07/25 Safety Area Alternatives on Wildlife Species	4.8-33
Table	4.8-6	Summary of Runway 18/36 RSA Improvement Impacts On Cover Types	4.8-39
Table	4.8-7	Summary of Runway 18/36 RSA Alternatives on Wildlife Species	4.8-40
Table	4.8-8	Impacts by Cover Type for Combinations of Alternatives	4.8-43
Table	4.9-1	Summary of Impacts to Historical, Architectural, Archaeological, and Cultural Resources	4.9-3
Table	4.10-1	Economic Impact of Construction (2011 Dollars)	4.10-2
Table	4.10-2	Demographic Characteristics of Kodiak Island Borough City of Kodiak and Kodiak Station, From the 2010 Census	4.10-5
Table	4.10-3		4.10-12
Table	4.10-4	U.S. Coast Guard Base Resource Harvest by Major Resource Category	4.10-13
Table	4.10-5	Generalized Chiniak Bay Area Commercial Catch	4.10-19
Table	4.10-6	Average Sport Fishing Activity Near the Buskin River Chiniak Bay, From Shore and Chiniak Bay from Boats, 2010	4.10-20
Table	4.10-7	Kodiak Area Race and Income by Census Tract	4.10-21
Table	4.10-8	Economic Impact of Runway 07/25 Alternatives	4.10-27
Table	4.10-9	Economic Impact of Runway 18/36 Alternatives	4.10-29
Table	4.10-10	Economic Impact Maximum Buildout (2011 Dollars)	4.10-30
Table	4.11-1	Summary of Impacts to Subsistence Resources and Uses	4.11-2
Table	4.11-2	Resources Harvested and Reported Per Year	4.11-8
Table	4.11-3	City of Kodiak Resources Harvest by Major Resource Category	4.11-8
Table	4.11-4	U.S. Coast Guard Base Resource Harvest By Major Resource Category	4.11-9
Table	4.11-5	Reported Buskin River Drainage Subsistence Harvest By Salmon Species, 2002-2012	4.11-15

Table	4.11-6	Reported Buskin River Drainage Subsistence Harvest By Permit, 2002-2012	4.11-16
Table	4.11-7	Estimated Halibut Subsistence Harvest by SHARC Holders Using All Gear Types Within Regulatory Area 3A, Kodiak Island Road System Subarea	4.11-18
Table	4.11-8	Combined Direct Subsistence Effects of Alternatives	4.11-32
Table	4.12-1	Summary of Noise Impacts	4.12-1
Table	4.13-1	Plans Governing Kodiak Island Borough Land Use	4.13-8
Table	4.13-2	Combined Fill Impacts	4.13-17
Table	4.14-1	Summary of Physical Use of Section 4(f) Resources	4.14-3
Table	4.14-2	Summary of Section 4(f) Constructive Use Buskin State Recreation Site	4.14-4
Table	4.14-3	Combined Use of Refuge Lands	4.14-36
Table	4.15-1	Summary of Light Emissions and Visual Impacts By Project and Alternative	4.15-2
Table	4.15-2	Summary of Runway 07/25 Build Alternatives Visual Impacts	4.15-20
Table	4.15-3	Short Term Runway 18/36 Build Alternatives Visual Impacts	4.15-28
Table	4.15-4	Long Term Runway 18/36 Build Alternatives Visual Impacts	4.15-29
Table	4.15-5	Combined Impacts	4.15-49
Table	4.18-1	Summary of Impacts on Fill Material and Energy Supply	4.18-2
Table	4.18-2	Combined Impacts	4.18-7
Table	4.19-1	Ambient Air Quality Standards	4.19-7
Table	4.22-1	Combined Impacts	4.22-21
Table	4.24-1	Anticipated Construction Cost for each Build Alternative	4.24-6
Table	4.24-2	Economic Impact of Construction (2011 Dollars)	4.24-9
Table	4.24-3	Summary of Impacts to Subsistence Resources	4.24-10
Table	4.24-4	Summary of Light Emissions and Visual Impacts By Build Alternatives	4.24-13
Table	4.24-5	Summary of Direct Impacts to Waters of the U.S.	4.24-15
Table	4.24-6	Summary of Noise Impacts	4.24-16
Table	4.24-7	Direct Impact/Percentage Impact on Each Cover Type In the Project Area	4.24-18
Table	4.24-8	Summary of Direct Impacts to Wetlands	4.24-20
Table	4.24-9	Summary of Potential Impacts to Fish and Aquatic Invertebrate Species and Habitats in the Project Area From Runway 07/25 Alternatives	4.24-22
Table	4.24-10	Summary of Potential Impacts to Fish and Aquatic Invertebrate Species and Habitats in the Project Area From Runway 18/36 Alternatives	4.24-23
Table	4.24-11	Summary of Potential Direct and Indirect Effects to Fish And Aquatic Invertebrate Species and Habitats in the Project Area from Runway 18/36 Alternatives	4.24-24

Table	4.24-12	Summary of Habitat Impacts for Federally Listed Threatened, Endangered and Sensitive Waterbirds	4.24-26
Table	4.24-13	Summary of Habitat Impacts for Marine Mammals	4.24-28
Table	4.24-14	Summary of Habitat Impacts on Sensitive Upland Wildlife Species	4.24-31

Chapter 5 – Cumulative Impacts

Table	5-1	Major Projects Completed in the Last Decade	5-3
Table	5-2	Current and Reasonably Foreseeable Projects	5-5

Chapter 6 – Mitigation

Table	6-1	Environmental Impacts Summary Improvements to the Runway Safety Area – Preferred Alternatives	6-15
-------	-----	---	------

Figures

Summary of Environmental Impact Statement 1

Figure 1	Existing Airport Dimensional Criteria	3
Figure 2	Kodiak RSA Improvement Build Alternatives	11
Figure 3	Preferred Alternatives	17

Chapter 1 – Purpose and Need

Figure 1-1	Airport Location/Vicinity Map	1-3
Figure 1-2	Existing Airport Dimensional Criteria	1-9

Chapter 2 – Alternatives

Figure 2-1	Runway 07/25 Alternative 1 – No Action	2-19
Figure 2-2	Runway 07/25 Alternative 2 – Extend Runway 25 RSA Landmass by 600 feet and install 70-kt EMAS on newly Constructed Landmass	2-21
Figure 2-3	Runway 07/25 Alternative 3 – Extend Runway 25 RSA Landmass by 1,000 Feet	2-23
Figure 2-4	Runway 18/36 Alternative 1 – No Action	2-31
Figure 2-5	Runway 18/36 Alternative 2 – Extend RSA to the South by 600 feet, north by 240 feet and install 40-kt EMAS on newly constructed landmass	2-33
Figure 2-6	Runway 18/36 Alternative 3 – Extend RSA to south by 240 feet, to north by 450 feet and install 70-kt EMAS On newly constructed landmass	2-35
Figure 2-7	Runway 18/36 Alternative 4 - Extend RSA north And south by 300 feet and install 40-kt EMAS on newly Constructed Landmass	2-37
Figure 2-8	Runway 18/36 Alternative 5 - Extend RSA north And south by 500 feet	2-39
Figure 2-9	Runway 18/36 Alternative 6 – Extend RSA south by 400 feet North by 240 feet, and install 40-kt EMAS on newly Constructed landmass	2-41
Figure 2-10	Runway 18/36 Alternative 7 – Extend RSA south by 600 feet Shift runway south 240 feet, and install 40-kt EMAS On Existing Pavement	2-43

Chapter 3 – Affected Environment

Figure	3-1	Airport Environs	3-3
--------	-----	------------------	-----

Chapter 4 – Environmental Consequences

Figure	4.2-1	Water Quality Project Areas	4.2-3
Figure	4.2-2	Stormwater Drainage Basins at the Kodiak Airport	4.2-11
Figure	4.2-3	Stormwater Outfall Associated with Bulk Fuel Facility	4.2-17
Figure	4.2-4	Wastewater Treatment Plant and Outfall	4.2-21
Figure	4.3-1	Wetlands and Other Waters of the U.S.	4.3-11
Figure	4.4-1	Buskin River Floodplain Boundaries	4.4-5
Figure	4.5-1	Project Area Map	4.5-13
Figure	4.5-2	Landscape Area Map	4.5-15
Figure	4.5-3	Lower Buskin River and Estuary	4.5-29
Figure	4.5-4	Dominant Substrates and Algal Presence in Northern Marine Portion of Airport Project Area	4.5-35
Figure	4.5-5	Dominant Substrates and Algal Presence in Southern Marine Portion of Airport Project Area	4.5-37
Figure	4.5-6	Dominant Substrates, Habitats, and Depth in Northern Marine Portion of Airport Project Area	4.5-55
Figure	4.5-7	Dominant Substrates and Freshwater Influenced Marine Habitats in Northern Marine Portion of Airport Project Area	4.5-73
Figure	4.5-8	Dominant Substrates, Habitats, and Depth in Southern Marine Portion of Airport Project Area	4.5-77
Figure	4.6-1	Project Area and Landscape Map	4.6-7
Figure	4.7-1	Project Area and Landscape Map	4.7-7
Figure	4.7-2	Haulouts and Otter Locations	4.7-13
Figure	4.8-1	Terrestrial Vegetation and Wildlife Project Area and Landscape Area	4.8-13
Figure	4.8-2	Land Cover Types Observed in the Airport Project Area	4.8-15
Figure	4.9-1	Area of Potential Effect (APE)	4.9-11
Figure	4.10-1	Commercial Fisheries Openings in the Kodiak Management Area	4.10-9
Figure	4.10-2	Chiniak Bay Commercial Fishery Area	4.10-17
Figure	4.11-1	Approximate Subsistence Fishery Areas and Fishery Closure	4.11-13
Figure	4.12-1	Existing Noise Conditions (2007)	4.12-5
Figure	4.12-2	No Action Noise Contours (2014)	4.12-9
Figure	4.12-3	Runway 18/36 RSA Alternative 7 Noise Contours	4.12-13
Figure	4.13-1	National Marine Wildlife Refuge and Buskin River State Recreation Site Boundaries	4.13-5
Figure	4.14-1	DOT Section 4(f) Resources	4.14-11
Figure	4.15-1	Visual Observation Points	4.15-9

Figure 4.15-2	Existing Conditions – Lower Buskin River and Buskin River Beach Viewpoints	4.15-11
Figure 4.15-3	Existing Conditions – Old Womens Mountain Trail and Bunker Interpretive Viewpoints	4.15-13
Figure 4.15-4	Existing Conditions – Pillar Mountain and Finny Beach Viewpoints	4.15-15
Figure 4.15-5	Existing Conditions – West Puffin Island and Subsistence Boundary Rocks Viewpoints	4.15-17
Figure 4.15-6	Existing Conditions Compared to Simulated “With Project” Runway 18/36 Alternative 5 (600’ Extension) and Runway 07/25 Alternative 3 (1000’ Extension) from Old Womens Mountain Trail Viewpoint	4.15-25
Figure 4.15-7	Existing Conditions Compared to Simulated “With Project” Runway 18/36 Alternative 3 (450’ Extension) and Runway 07/25 Alternative 3 (1000’ Extension) from the Buskin River Beach Viewpoint	4.15-33
Figure 4.15-8	Existing Conditions Compared to Simulated “With Project” Runway 18/36 Alternative 5 (600’ Extension) and Runway 07/25 Alternative 3 (1000’ Extension) from the Buskin River River Beach Viewpoint	4.15-41
Figure 4.15-9	Existing Conditions Compared to Simulated “With Project” Runway 18/36 Alternative 5 (600’ Extension) and Runway 07/25 Alternative 3 (1000’ Extension) from the Lower Buskin River Viewpoint	4.15-43
Figure 4.15-10	Existing Conditions Compared to Simulated “With Project” Runway 18/36 Alternative 5 (600’ Extension at Runway End 36) From Finny Beach Viewpoint	4.15-45
Figure 4.16-1	Current and Former Bulk Storage and Contaminated Sites	4.16-5
Figure 4.16-2	Hazardous Material Storage Sites	4.16-7
Figure 4.22-1	Existing Material Sources	4.22-5
Figure 4.22-2	Proposed Haul Routes and Barge Landings	4.22-11
Figure 4.22-3	Typical Runway Safety Area Section	4.22-15